SEQUENCE LISTING

<110> Weber, Bernard H.F.
       Stoehr, Heidi

<120> Novel retina-specific human proteins C7orf9, C12orf7, MPP4 and F379

<130> 033488-001

<140> US 09/995,793
<141> 2001-11-29

<150> 60/253,751
<151> 2000-11-29

<160> 71

<170> PatentIn version 3.1

<210> 1
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<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> artificial sequence, Translation start at 209; stop at 2435

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gctcatggga ccctctggtg ttggagtaaa tgagctcaga agacaactta ttgaatttaa   1560
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ctcagatact gagtctcaat gagacttctt gtttaatgct ggagtttaa cactgtaccc      2160
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tggttatgtg gttacctatt ttaacttaat ttttttttcct ttacctcata tgcagctgtg      2340
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<210>  2
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 1 to 108

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ggcaaataat cctcagttac cagaagatgt atccataact gcctagcttg cctgtcagtt       180
tttaatagct aaagatataa atctgggtaa tctaactcaa atggcttagt ttcattttaa       240
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ttcttcagta tggaataatg                                                   320
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<210>  3
<211>  512
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 173 to 352

<400>  3
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gatggttaag agtaggcacc acaggggaag actgtgtttc atttgatgtg tatcccagtg       120
tgtagcacag ggcctggctt gctgaggaaa tgctattgaa aatatattcc agtgtgctga       180
gagctggtgg ccagtgggac tgagtgagct gtgtgccgtg tattgacccg cttcctagtc       240
ctgaattcct ttcagaagct ccggcaggga ggatgataca gtcagacaaa ggagcagatc       300
caccagacaa gaaggacatg aagctttcta cagccaccaa tccacagaat ggtatgtgtc       360
accaggactc cttttctaga ccagaaagta atatcacctc tgacatgtga tcaaatgaat       420
aggcagaaat cctgacagac ttactgtgat ccctatgagg atcttgtaca tttttggttg       480
cactactgcc ctaccagtga taactttaag aa                                     512
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<210>  4
<211>  448
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<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 165 to 286

<400> 4
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acacccgcac ctgccacccc atctctgctc tcttcctttc ctaggcctct cccagatcct     180
gaggcttgtg ctgcaagagc tgagtctgtt ctacagcaga gatgtgaatg gagtgtgtct     240
cttgtacgat ctcctccact cgccgtggct tcaggctctg ctaaaggtga gtgcttcttt     300
gctcggaagc ctttgcttgc tgaagggggtt gtggggagtg tgtagaaaat gacagcttca     360
gtccattcag gctggatagt ggaatagttt ataaacaaca gaaattgata tctcacagtt     420
ctgtaggcca ggaagtccaa aatccagt                                       448
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<210> 5
<211> 448
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 206 to 283

<400> 5
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tgtttcttct ctttgagagt cttaaatcca aaatggcaat agtcatatta tcaatatcaa     180
ttctccctcc cttgtccttc tgcagattta tgactgcctc caggaattta aagaaaagaa     240
actagttcct gccacaccac atgcacaggt gttatcctat gaggtaagga gattttattc     300
cacaggatag tagagctctg atgtggtgcc attttcccca cattgctagt tcaaatgaat     360
taaaggttct aaggaaaagt tttattgatg actatgcatc taataaatgt ttctaattga     420
actttaatat aaggaagaac attggctg                                       448
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<210> 6
<211> 384
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 165 to 245

<400> 6
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ggtaggcttt aatggatggc tttatagatg aaaaagaagg ctccagtaat agctttttaa      60
aggtcaatat catgttagta tgtatgttat ccagcctggg tgaggttaag taggtgataa     120
agattttta aaatttttat aatgtatcct tttccatgaa ccaggtagtg gagttattac     180
gtgaaacccc tacttcccct gagatccaag agctgagaca aatgctccag gctccacact     240
tcaaggcaag tgcctgctaa aatagaaaag atgtccccat ctggcacata gacaaagttg     300
ggaaggagaa atatatgtga tggaaaatgt tctctctgaa tagatgttct attactgtac     360
acggttactg accaacagat tgta                                           384
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<210>  7
<211>  448
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 133 to 264

<400>  7
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ccctgtgccc aggccttgct cagtgcccat gacacgatag ctcagaaaga ttttgaaccc   180
cttctccctc cactgccaga caatatccct gagagtgagg aagcaatgag gattgtttgt   240
ttagtgaaaa accaacagcc cctggtaagg aaatcatttt ttatctttcc atttagggta   300
agcttaggtt aattgtgaac caaattatat ctagtggtta cttgggcagt agccttgcct   360
gcgatcacat atacagtgat aataacggct gtcaactctg caagttttgc ctgtggtttc   420
aaacatatta catgtcacgg tgttttct                                      448


<210>  8
<211>  448
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 166 to 247

<400>  8
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ccagagctgc attgattgaa agaccagagc tgcattgatt gagggaagcc acctggaaaa   120
tggtcatgtc aggtaacaga gggatctcgt ctattctctc ttcagggagc caccatcaag   180
cgccacgaga tgacagggga catcttggtg gccaggatca tccacggtgg gctggcggag   240
agaagtggta agctggagca gctgggattg agagttacca gaaaaacagg aaacccttga   300
ctgtttaggc ttctttctag agaaatccct ttttttttctt tttttttttc tttttttttt   360
tttgagatgg agtcttgctc tgtcgcccag gctggagtgc agtggcgtga tctcggctca   420
ctgcaagctc cacctctggg gtttgcca                                      448


<210>  9
<211>  448
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 162 to 247

<400>  9
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ttctttgtat ctttctttgt tttttgttac tgtctgccta gggttgctat atgctggaga   180
caaactggta gaagtgaatg gagtttcagt tgagggactg gaccctgaac aagtgatcca   240
tattctggta aatcttcttt ttgccttttt gttaatgact tggagaaatg ccaaggctga   300
actgggacca tcaagcccac gtgtgtgcac tgggatgtac cggggactca agttctcttg   360
gcagctttct ccctccaggc tcccagacct tgtctgtcac ccatgtcact tgctgacctc   420
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```
cctcctctac cccgagaagt tctggtcc                                        448
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<210>  10
<211>  384
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 158 to 229

<400>  10
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ccatgattgt catcctttct cctctcttat tttccaggcc atgtctcgag gcacaatcat    180
gttcaaggtg gttccagtct ctgaccctcc tgtgaatagc cagcagatgg taagaattta    240
ctgagccttc aatctcacac acagtaaatc cccaagtaac agcaactaaa tatgatgcgt    300
aataatccta tcctttgtac tgtgttggac ctggattcaa gactgtgttg gatatttttc    360
aatactgatg gcccgagaag caaa                                           384
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```
<210>  11
<211>  448
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 138 to 334

<400>  11
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tatgcacctg ccatcaggtg tacgtccgtg ccatgactga gtactggccc caggaggatc    180
ccgacatccc ctgcatggac gctggattgc ctttccagaa gggggacatc ctccagattg    240
tggaccagaa tgatgccctc tggtggcagg cccgaaaaat ctcagaccct gctacctgcg    300
ctgggcttgt cccttctaac caccttctga agaggtaagg aacgtcacca ctcctggact    360
cagggctgaa ccatcaggaa acaaaatgtt tttcttgggt ttctgttacc tcaagatgag    420
ataaagaggg acaagcagat gaatgaac                                       448
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<210>  12
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 152 to 216

<400>  12
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tttttgtcgc atggtttttt cccccccata ggaagcaacg ggaattctgg tggtctcagc    180
cgtaccagcc tcacacctgc ctcaagtcaa ccctatgtga gtattgcaac tgcccgacag    240
gttcttcctg tttgcaataa agaccatggc attgcagtaa ataaagagtc taattgatgt    300
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```
gaggctggcc atgccacatg                                                    320
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```
<210>  13
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 161 to 178

<400>  13
cttactaaat cttccctgaa tttctagaga ataaacccag aatactaatt acaataattt      60
ttgcacatta catttcttat tgtaaattaa tctgagaaaa tatagtacag atactgtgtt     120
cttttttatcc cccctgcttc aatcatttgc ttgtactcag caatttctat ggaagaaggt     180
aagaaatagt atttaggaaa aaactcttat ctccaaagtc ttttagaaat ttcttgtagt     240
ttaaagaatt cactttaatt cagttcagct atttattaag ctcttcctat atacctagta     300
gtgtgatagt cattattaag                                                 320
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<210>  14
<211>  384
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 179 to 217

<400>  14
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tctttttaat gcagacacat tttaaattct gtttctccct ttctatactc ttttatagaa     180
gatgacatga agattgatga gaaatgtgtg gaagcaggta acattttctc ttgattgctt     240
tgctgttaga agaaatatga agcatgtcaa ttatagatta tctgaagcag aggtgtccaa     300
aggggccatg ggcctttcct ctagaaatgt gtaaaatgac cctccacccc catctatctt     360
ctgtagttct ggcacttgga agga                                            384
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<210>  15
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 110 to 130

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tttgaatctg gtaagtaaaa aatgagtatt tggtactgat ttttaaatgt atattctaaa     180
ttttgatgca atttatacac atatttataa taactgttta aatatatcaa cattaaaaaa     240
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<210>  16
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 174 to 188

<400>  16
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agtggtgacg tgcacgtctt gcttatgtca tttgccttga tttgatggct aacatgatct     120
tcttaaaggc ttaacttttt catgtctgtt tctgcactta cccaaatatc cagaggaact     180
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ttgttgttta tggttttccc                                                 320


<210>  17
<211>  320
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 170 to 211

<400>  17
ataggatgaa aaatgcttag aacattcggt gagccactca aggataaatt caactctgct      60
gccgtctact aaggtggtca cttgaaaagt tgaaaatgat ttcatgaatt tattctgaat     120
aaacttctcg ctctcacata ttctgctcca tctgttcttt gtgtttcaga caaggaggag     180
tttgttggct acggtcagaa gttctttata ggtaggtgat aaattaacaa gaggtgggtc     240
tctgtcactt gttaaattat gtttccaaac ctgacactgt tttgaaagtt tcttttgcta     300
atgaacattt ccagacctgt                                                 320


<210>  18
<211>  512
<212>  DNA
<213>  Homo sapiens

<400>  18
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tattttttccc tcatattact tcccatcttc taacttcaga cagacctgac tatattaatg     120
aacactttag gatcatggtt gctacatatt tcatcaggtg tgaagctaca agtgatctct     180
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cgcctttgtc gcaggaagtc tcacctcagc ccgctgcatg ccagtgtgtg ctgcaccggc     300
agctgctaca gtgcagtggg tgccccttac gaggaggtgg tgaggtacca gcgacgccct     360
tcagacaagt accgcctcat agtgctcatg ggtatgtccc agcatgcact gtctctcctc     420
ctccttgaga agtcttcctt ctagattcag gtgtcttgca ttgggaataa tggtgaaagt     480
agaactcttt atggacccc atacaaatac ct                                    512


<210>  19
<211>  384
<212>  DNA
<213>  Homo sapiens
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<220>
<221> misc_feature
<223> genomic DNA, Exon from 160 to 240

<400> 19
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tctcaagttt cttcagtaga aggactaaaa tgataattcc atcacataat tatatttatc     120
cacatctgat gatttctgtg tgtgactttt tgtgtttagg accctctggt gttggagtaa     180
atgagctcag aagacaactt attgaattta atcccagcca ttttcaaagt gctgtgccac     240
gtatgtttag ttctgctttc ataatggttt gtgttttggt aaaactttct ttgctgatct     300
catttaacta tgtcattcca tctttgttgt aaaagtatac aacaccaggg atagttctta     360
agtatttcta accatattta tttt                                           384
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<210> 20
<211> 448
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 200 to 293

<400> 20
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cttctttta gttctagcat tttatctcct tgattatata ttcatttatt tattttgatt     120
agatatcttt attcaaatgc atattggtaa tcaaagaatt ctgaagacac tgaaacctttt     180
cattcccttt ttctgataga cactactcgt actaaaaaga gttacgaaat gaatgggcgt     240
gagtatcact atgtgtccaa ggaaacattt gaaaacctca tatatagtca caggtaaagt     300
agaggttcag aagctgattc ttacctcttg ttgtttttaca tttgaaatag attccctatt     360
tttatgtatt ttccaaatct cctgggtaat tccttttgtt tctgaggagt taagcaagaa     420
atgtacatcg atatacagca caccaact                                       448
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<210> 21
<211> 448
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 133 to 241

<400> 21
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ttatcctcat gttactacta ataatatttt ccttgtagaa agtgttctgt tttgtttggc     120
ctgctcttgc aggatgctgg agtatggtga gtacaaaggc cacctgtatg gcactagtgt     180
ggatgctgtt caaacagtcc ttgtcgaagg aaagatctgt gtcatggacc tagagcctca     240
ggtgggtcca tggtggaata tttatgtccc caaacaatga atgcgtatca tccattttttt     300
gtgcacatgc tgtaggttat agttgagaca tttattctgt tagccttta agaataaggc     360
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ggaaagaagt cttgcttctc agacagaa                                       448
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<210> 22
<211> 448
<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 164 to 298

<400> 22
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agctacttgg gaggctgaga tgggtggatc gtttgagcct gggaagctga ggctacagtg    60
aactgtgatt gcaccacagc actccagcct gggtgacaga gcaagaccat gtctcaaaac   120
aaaacaaaca aaaaataaat gtgcatttaa attttctgtg taggatattc aaggggttcg   180
aacccatgaa ctgaagccct atgtcatatt tataaagcca tcgaatatga ggtgtatgaa   240
acaatctcgg aaaaatgcca aggttattac tgactactat gtggacatga agttcaaggt   300
aagagcaagt caaaaactac tgtattgctt tcagtggctt ctgcgtggga gagatctggg   360
ttgggctggg ccaaggatct ctgatctcat tgtcctcctc ctcctttttg accccctctc   420
caaaaggccc tcaataaaat ggtttact                                      448
```

<210> 23
<211> 704
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 197 to 704

<400> 23
```
ttttctagtt tgctggtttt gtagaatttt gaaaaaatat ttttgaaact ttattgaaaa    60
tcatctgtgc aaaattttcg gaccttactg tttttataca tagtttcaca actgaatgtg   120
acagcataac aaactgtatt ttttccattt gtccaattaa gtctgtacta tccatatttt   180
tctatttctc ctaaaggatg aagacctaca agagatggaa aatttagccc aaagaatgga   240
aactcagttt ggccaatttt ttgatcatgt gattgtgaat gacagcttgc acgatgcatg   300
tgcccagttg ttgtctgcca tacagaaggc tcaggaggag cctcagtggg taccagcaac   360
atggatttcc tcagatactg agtctcaatg agacttcttg tttaatgctg gagtttaac    420
actgtaccct tgatacagcg atccatagtt gcaatctaaa acaacagtat ttgacccatt   480
ttaatgtgta caacttttaaa agtgcagcaa tttattaatt aatcttatt gaaaaaaatt    540
tttattgtat ggttatgtgg ttacctattt taacttaatt ttttttcctt tacctcatat   600
gcagctgtgg tagaaatatg aataatgtta agtcactgag tatgagaacc tttcgcagat   660
ttcacatgat ctttttaaga tttaaataaa gagctttcct aaat                    704
```

<210> 24
<211> 637
<212> PRT
<213> Homo sapiens

<400> 24

```
Met Ile Gln Ser Asp Lys Gly Ala Asp Pro Pro Asp Lys Lys Asp Met
1               5                   10                  15
Lys Leu Ser Thr Ala Thr Asn Pro Gln Asn Gly Leu Ser Gln Ile Leu
            20                  25                  30
Arg Leu Val Leu Gln Glu Leu Ser Leu Phe Tyr Ser Arg Asp Val Asn
        35                  40                  45
Gly Val Cys Leu Leu Tyr Asp Leu Leu His Ser Pro Trp Leu Gln Ala
    50                  55                  60
Leu Leu Lys Ile Tyr Asp Cys Leu Gln Glu Phe Lys Glu Lys Lys Leu
```

```
65                    70                    75                    80
Val Pro Ala Thr Pro His Ala Gln Val Leu Ser Tyr Glu Val Val Glu
                  85                    90                    95
Leu Leu Arg Glu Thr Pro Thr Ser Pro Glu Ile Gln Glu Leu Arg Gln
              100                   105                   110
Met Leu Gln Ala Pro His Phe Lys Ala Leu Leu Ser Ala His Asp Thr
          115                   120                   125
Ile Ala Gln Lys Asp Phe Glu Pro Leu Leu Pro Pro Leu Pro Asp Asn
      130                   135                   140
Ile Pro Glu Ser Glu Glu Ala Met Arg Ile Val Cys Leu Val Lys Asn
145                   150                   155                   160
Gln Gln Pro Leu Gly Ala Thr Ile Lys Arg His Glu Met Thr Gly Asp
                  165                   170                   175
Ile Leu Val Ala Arg Ile Ile His Gly Gly Leu Ala Glu Arg Ser Gly
              180                   185                   190
Leu Leu Tyr Ala Gly Asp Lys Leu Val Glu Val Asn Gly Val Ser Val
          195                   200                   205
Glu Gly Leu Asp Pro Glu Gln Val Ile His Ile Leu Ala Met Ser Arg
      210                   215                   220
Gly Thr Ile Met Phe Lys Val Val Pro Val Ser Asp Pro Pro Val Asn
225                   230                   235                   240
Ser Gln Gln Met Val Tyr Val Arg Ala Met Thr Glu Tyr Trp Pro Gln
                  245                   250                   255
Glu Asp Pro Asp Ile Pro Cys Met Asp Ala Gly Leu Pro Phe Gln Lys
              260                   265                   270
Gly Asp Ile Leu Gln Ile Val Asp Gln Asn Asp Ala Leu Trp Trp Gln
          275                   280                   285
Ala Arg Lys Ile Ser Asp Pro Ala Thr Cys Ala Gly Leu Val Pro Ser
      290                   295                   300
Asn His Leu Leu Lys Arg Lys Gln Arg Glu Phe Trp Trp Ser Gln Pro
305                   310                   315                   320
Tyr Gln Pro His Thr Cys Leu Lys Ser Thr Leu Ser Ile Ser Met Glu
                  325                   330                   335
Glu Glu Asp Asp Met Lys Ile Asp Glu Lys Cys Val Glu Ala Asp Glu
              340                   345                   350
Glu Thr Phe Glu Ser Glu Glu Leu Ser Glu Asp Lys Glu Glu Phe Val
          355                   360                   365
Gly Tyr Gly Gln Lys Phe Phe Ile Ala Gly Phe Arg Arg Ser Met Arg
      370                   375                   380
Leu Cys Arg Arg Lys Ser His Leu Ser Pro Leu His Ala Ser Val Cys
385                   390                   395                   400
Cys Thr Gly Ser Cys Tyr Ser Ala Val Gly Ala Pro Tyr Glu Glu Val
                  405                   410                   415
Val Arg Tyr Gln Arg Arg Pro Ser Asp Lys Tyr Arg Leu Ile Val Leu
              420                   425                   430
Met Gly Pro Ser Gly Val Gly Val Asn Glu Leu Arg Arg Gln Leu Ile
          435                   440                   445
Glu Phe Asn Pro Ser His Phe Gln Ser Ala Val Pro His Thr Thr Arg
      450                   455                   460
Thr Lys Lys Ser Tyr Glu Met Asn Gly Arg Glu Tyr His Tyr Val Ser
465                   470                   475                   480
Lys Glu Thr Phe Glu Asn Leu Ile Tyr Ser His Arg Met Leu Glu Tyr
                  485                   490                   495
Gly Glu Tyr Lys Gly His Leu Tyr Gly Thr Ser Val Asp Ala Val Gln
              500                   505                   510
Thr Val Leu Val Glu Gly Lys Ile Cys Val Met Asp Leu Glu Pro Gln
          515                   520                   525
```

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```
Asp Ile Gln Gly Val Arg Thr His Glu Leu Lys Pro Tyr Val Ile Phe
    530                 535                 540
Ile Lys Pro Ser Asn Met Arg Cys Met Lys Gln Ser Arg Lys Asn Ala
545                 550                 555                 560
Lys Val Ile Thr Asp Tyr Tyr Val Asp Met Lys Phe Lys Asp Glu Asp
                565                 570                 575
Leu Gln Glu Met Glu Asn Leu Ala Gln Arg Met Glu Thr Gln Phe Gly
                580                 585                 590
Gln Phe Phe Asp His Val Ile Val Asn Asp Ser Leu His Asp Ala Cys
            595                 600                 605
Ala Gln Leu Leu Ser Ala Ile Gln Lys Ala Gln Glu Glu Pro Gln Trp
    610                 615                 620
Val Pro Ala Thr Trp Ile Ser Ser Asp Thr Glu Ser Gln
625                 630                 635
```

```
<210>   25
<211>   1190
<212>   DNA
<213>   Homo sapiens

<220>
<221>   misc_feature
<223>   artificial sequence, Translation start at 48, stop at 638

<400>   25
ataaacattg ggctgcacat agagacttaa ttttagattt agacaaaatg gaaattattt      60
catcaaaact attcatttta ttgactttag ccacttcaag cttgttaaca tcaaacattt     120
tttgtgcaga tgaattagtg atstccaatc ttcacagcaa agaaaattat gacaaatatt     180
ctgagcctag aggataccca aaaggggaaa gaagcctcaa ttttgaggaa ttaaaagatt     240
ggggaccaaa aaatgttatt aagatgagta cacctgcagt caataaaatg ccacactcct     300
tcgccaactt gccattgaga tttgggagga acgttcaaga agaaagaagt gctggagcaa     360
cagccaacct gcctctgaga tctggaagaa atatggaggt gagcctcgtg agacgtgttc     420
ctaacctgcc ccaaaggttt gggagaacaa caacagccaa aagtgtctgc aggatgctga     480
gtgatttgtg tcaaggatcc atgcattcac catgtgccaa tgacttattt tactccatga     540
cctgccagca ccaagaaatc cagaatcccg atcaaaaaca gtcaaggaga ctgctattca     600
agaaaataga tgatgcagaa ttgaaacaag aaaaataaga aacctggagc ctgtccctaa     660
agctgtggcc tgtaatctac aaatggctct atagcgaaga ccacacggaa gagtagctac     720
atacacttca tcagctatgg atcatcaacg gcaatttttc cttgtcagta cagctataat     780
agtatcttga aagttgtaaa aaaattaaag catatttgtt acgtaaagtt aaaatgattt     840
ttgtctgaat aaaaaaaaag cattgcaaat gctttagaaa tctctgataa tggagagaga     900
gacagaggac cctcctcact accctatata aaaatcattg gcacagttac acttaataaa     960
aaaaattaaa cagaagagca ccctgaaaaa cattatgatg gaaattaaat agtatgccag    1020
aataacatgg ttgacaaata agtgaacaag gattaaaaat cacttacaaa cgtgtttctg    1080
tacccctttt ctatcgtgtc aaatgttaat gaatctgtga tcaattgaaa tgtaaatgtc    1140
tgtgtaaaac tacaaaataa aaactcttag actttaggga gaaaagaaaa                1190
```

```
<210>   26
<211>   256
<212>   DNA
<213>   Homo sapiens

<220>
<221>   misc_feature
<223>   genomic DNA, Exon from 1 to 185
```

```
<400>  26
ataaacattg ggctgcacat agagacttaa ttttagattt agacaaaatg gaaattattt      60
catcaaaact attcatttta ttgactttag ccacttcaag cttgttaaca tcaaacattt     120
tttgtgcaga tgaattagtg atstccaatc ttcacagcaa agaaaattat gacaaatatt     180
ctgaggtaag tttttttaaat ctctctaatg tgagtagcat taattacata atattaatcc    240
taagtctaat gatttt                                                      256
```

```
<210>  27
<211>  512
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 62 to 462
```

```
<400>  27
gggtttaaat ctgttgctta taacaacagt atgttattgt aatggtcatt tctaattata      60
gcctagagga tacccaaaag gggaaagaag cctcaatttt gaggaattaa aagattgggg     120
accaaaaaat gttattaaga tgagtacacc tgcagtcaat aaaatgccac actccttcgc     180
caacttgcca ttgagatttg ggaggaacgt tcaagaagaa agaagtgctg gagcaacagc     240
caacctgcct ctgagatctg gaagaaatat ggaggtgagc ctcgtgagac gtgttcctaa     300
cctgccccaa aggtttggga gaacaacaac agccaaaagt gtctgcagga tgctgagtga     360
tttgtgtcaa ggatccatgc attcaccatg tgccaatgac ttattttact ccatgacctg     420
ccagcaccaa gaaatccaga atcccgatca aaaacagtca aggtaaatac ctggaaacca     480
gtcaaagtgc atgggcagtt atatagaggt gg                                   512
```

```
<210>  28
<211>  768
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  genomic DNA, Exon from 115 to 718
```

```
<400>  28
acacaattca actcaagtat aattaggcag ttaggactat ggcttgtatt tgtatacaca      60
cttgcatgct gttgttctga tgggtgacaa cattttatac tgcttacatt ttaggagact     120
gctattcaag aaaatagatg atgcagaatt gaaacaagaa aaataagaaa cctggagcct     180
gtccctaaag ctgtggcctg taatctacaa atggctctat agcgaagacc acacggaaga     240
gtagctacat acacttcatc agctatggat catcaacggc aatttttcct tgtcagtaca     300
gctataatag tatcttgaaa gttgtaaaaa aattaaagca tatttgttac gtaaagttaa     360
aatgattttt gtctgaataa aaaaaaagca ttgcaaatgc tttagaaatc tctgataatg     420
gagagagaga cagaggaccc tcctcactac cctatataaa aatcattggc acagttacac     480
ttaataaaaa aaattaaaca gaagagcacc ctgaaaaaca ttatgatgga aattaaatag     540
tatgccagaa taacatggtt gacaaataag tgaacaagga ttaaaaatca cttacaaacg     600
tgtttctgta cacccttttct atcgtgtcaa atgttaatga atctgtgatc aattgaaatg     660
taaatgtctg tgtaaaacta caaaataaaa actcttagac tttagggaga aaagaaaaag     720
gcaactatga gttacctctt ttagtgtctc ctctatctac atccagaa                  768
```

```
<210>  29
<211>  196
<212>  PRT
```

<213> Homo sapiens

<400> 29

```
Met Glu Ile Ile Ser Ser Lys Leu Phe Ile Leu Leu Thr Leu Ala Thr
1               5               10              15
Ser Ser Leu Leu Thr Ser Asn Ile Phe Cys Ala Asp Glu Leu Val Ile
            20              25              30
Ser Asn Leu His Ser Lys Glu Asn Tyr Asp Lys Tyr Ser Glu Pro Arg
        35              40              45
Gly Tyr Pro Lys Gly Glu Arg Ser Leu Asn Phe Glu Glu Leu Lys Asp
    50              55              60
Trp Gly Pro Lys Asn Val Ile Lys Met Ser Thr Pro Ala Val Asn Lys
65              70              75              80
Met Pro His Ser Phe Ala Asn Leu Pro Leu Arg Phe Gly Arg Asn Val
            85              90              95
Gln Glu Glu Arg Ser Ala Gly Ala Thr Ala Asn Leu Pro Leu Arg Ser
            100             105             110
Gly Arg Asn Met Glu Val Ser Leu Val Arg Arg Val Pro Asn Leu Pro
        115             120             125
Gln Arg Phe Gly Arg Thr Thr Thr Ala Lys Ser Val Cys Arg Met Leu
    130             135             140
Ser Asp Leu Cys Gln Gly Ser Met His Ser Pro Cys Ala Asn Asp Leu
145             150             155             160
Phe Tyr Ser Met Thr Cys Gln His Gln Glu Ile Gln Asn Pro Asp Gln
            165             170             175
Lys Gln Ser Arg Arg Leu Leu Phe Lys Lys Ile Asp Asp Ala Glu Leu
        180             185             190
Lys Gln Glu Lys
        195
```

<210> 30
<211> 1188
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> artificial sequence, Translation start at 347, stop at 604

<400> 30
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acacacaacg gggtttcggg gctgtggacc ctgtgccagg aaaggaaggg cgcagctcct    60
gcaatgcgga gcagccaggg cagtgggcac caggctttag cctccctttc tcaccctaca   120
gagggcaggc ccttcagctc cattctcctc caaggctgca gaggggggcag gaattggggg   180
tgacaggaga gctgtaaggt ctccagtggg tcattctggg cccagagatg ggtgctgaag   240
ctcccacgcc tgcctgtgaa aatggagtcc tctctcacct gggagagcca ggtgctgccc   300
cgagaaggat gcatttatgg cttcrtgaag tctttcctga cccccgatgc tgctgactat   360
agagacaaag tctcactatg ttgctcaggc tggtcttgaa ctcctggcct caagcgatcc   420
tcccacctya gcctcccaaa gwgttgggat tatagacatg agccactgca cctggccgac   480
cttgggcaag ttcttaaacc cttcaaagcc tcattttct ccaatcayaa aagggaaaga   540
tggtaatatt ttccccwcca aattcttgtc ggatgccctc acagaattga gattatgtac   600
gtaaacacc aggtgcctaa cccggcacag agcaggaggg ctaagcgtga catccagcac   660
gtggtcagtg gaatccagta ttcctaccca cctctctagt ctcccctcca ccctctccc   720
tttcagaggc accaagctgc ttgtggtctt gtctattccc actccctgcc tgactgaaca   780
ttttctccac ctcctgatca tcagcagcag aaactggctg ctcttcctcc tgggtagaca   840
gccagactgt atttcccagc tgcccctgca gtgagatgtg gccatcggag ccagcattgg   900
```

```
ccaatggact ctgcatggga gtgacgcatg cwgcctccag gcttgtccct aaaacctccc    960
acgtgtcctc sgcctgctct tcccacytcc aaggagcacg gcaattgtgg aagacccaga   1020
ttagtgatgg cagaaccata gatgggagga acctgggtcc ctgacttaaa gtatcatgga   1080
tttggatgtt cccttagtga gaaataaact tccattgtgt ttaagccttt atttgtttat   1140
agttggttac agcaactgcc ttcttttaat taaaacactc ctgctgct                1188
```

<210> 31
<211> 85
<212> PRT
<213> Homo sapiens

<400> 31

```
Met Leu Leu Thr Ile Glu Thr Lys Ser His Tyr Val Ala Gln Ala Gly
1               5                   10                  15
Leu Glu Leu Leu Ala Ser Ser Asp Pro Pro Thr Ser Ala Ser Gln Ser
            20                  25                  30
Val Gly Ile Ile Asp Met Ser His Cys Thr Trp Pro Thr Leu Gly Lys
            35                  40                  45
Phe Leu Asn Pro Ser Lys Pro His Phe Ser Pro Ile Thr Lys Gly Lys
        50                  55                  60
Asp Gly Asn Ile Phe Pro Thr Lys Phe Leu Ser Asp Ala Leu Thr Glu
65                  70                  75                  80
Leu Arg Leu Cys Thr
                85
```

<210> 32
<211> 560
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 101 to 460

<400> 32
```
tatatgggaa tgagccagct gcaccgctgc tgacagtggc tgggataatc ctccctgagc    60
tgttccaagg attagtcctg ctgccctgtg cccagctccc acacaacggg gtttcggggc   120
tgtggaccct gtgccaggaa aggaagggcg cagctcctgc aatgcggagc agccagggca   180
gtgggcacca ggctttagcc tcccttttctc accctacaga gggcaggccc ttcagctcca   240
ttctcctcca aggctgcaga gggggcagga attgggggtg acaggagagc tgtaaggtct   300
ccagtgggtc attctgggcc cagagatggg tgctgaagct cccacgcctg cctgtgaaaa   360
tggagtcctc tctcacctgg gagagccagg tgctgccccg agaaggatgc atttatggct   420
tcatgaagtc tttcctgacc cccgatgctg ctgactatag gtaagtctga gcaaatctgg   480
gggagcctca tcttggcatg agaaagagat ggcttcttct aagcccactg gccgtgatcc   540
caggattata acacattctg                                              560
```

<210> 33
<211> 405
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

<223> genomic DNA, Exon from 101 to 305

<400> 33
```
catgagaggt agtataatat agaggatatg tgtgcttact aagaggctgc ctgtctgacc      60
ttggacaagt tcttttttatt tatttattta ttttttatag agacaaagtc tcactatgtt     120
gctcaggctg gtcttgaact cctggcctca agcgatcctc ccaccttagc ctcccaaaga     180
gttgggatta tagacatgag ccactgcacc tggccgacct tgggcaagtt cttaaaccct     240
tcaaagcctc attttttctcc aatcataaaa gggaaagatg gtaatatttt cccctccaaa    300
ttcttgtaag tattaaacat tgtatatgta ttttgaacac gattaagctc taaacacttg     360
ttaggaagca ggagtagcat ttgaaacaaa cagctctttt cccac                      405
```


<210> 34
<211> 821
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 101 to 721

<400> 34
```
aagtattaaa cattgtatat gtattttgaa cacgattaag ctctaaacac ttgttaggaa      60
gcaggagtag catttgaaac aaacagctct tttcccacag gtcggatgcc ctcacagaat     120
tgagattatg tacgtaaaac accaggtgcc taacccggca cagagcagga gggctaagcg     180
tgacatccag cacgtggtca gtggaatcca gtattcctac ccacctctct agtctcccct     240
ccacccctct ccctttcaga ggcaccaagc tgcttgtggt cttgtctatt cccactccct     300
gcctgactga acattttctc cacctcctga tcatcagcag cagaaactgg ctgctcttcc     360
tcctgggtag acagccagac tgtatttccc agctgcccct gcagtgagat gtggccatcg     420
gagccagcat tggccaatgg actctgcatg ggagtgacgc atgctgcctc caggcttgtc     480
cctaaaacct cccacgtgtc ctccgcctgc tcttcccact tccaaggagc acggcaattg     540
tggaagaccc agattagtga tggcagaacc atagatggga ggaacctggg tccctgactt     600
aaagtatcat ggatttggat gttcccttag tgagaaataa acttccattg tgtttaagcc     660
tttatttgtt tatagttggt tacagcaact gccttctttt aattaaaaca ctcctgctgc     720
ttcatgttgc tggaatgctt gtaaccctgc cctgcttcac cagggtaact cctacttggc     780
ctttaagttt atctctgctg tcacaccgtc cagaaagcct t                         821
```


<210> 35
<211> 1514
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> artificial sequence, Translation start at 155, stop at 1192

<400> 35
```
gaaagtccag ccatctgtta cctgcgttgc ttcctggggr gggatagtcc acctggaggc      60
attcggagac ccagtgattg tgctccgygg agcctgggct gtgccccgcg ttgactgcct     120
catagatacc ctacgaaccc caaatgccag ctgcatgaga aaaggggactc accttctggt    180
tccctgcctg gaagaggaag agctggcatt gcacaggaga cggctggaca tgtctgaggc     240
actgccctgc ccgggcaagg agaccccccac cccaggctgc aggctggggg ccctgtattg    300
ggcctgtgtc cacaatgatc ccacccagct ccaagccata ctggatggtg gggtctcccc     360
agaggaggcc acccaggtgg acagcaatgg gaggacaggc ctcatggtcg catgctacca    420
cggcttccag agtgttgtgg ccctgctcag ccactgtcct ttccttgatg tgaaccagca    480
ggacaaagga ggggacacgg ccctcatgtt ggctgcccaa gcaggccacg tgcctctagt    540
```

```
gagtctcctg ctcaactact atgtgggcct ggacctggaa cgccgggacc agcgggggct        600
cacggcgtta atgaaggctg ccatgcggaa ccgctgtgct gacctgacag cagtggaccc        660
tgttcggggc aagacggccc tggaatgggc agtgctgacc gacagcttcg acaccgtgtg        720
gaggattcgg cagctgctga ggcggcccca agtggagcag cttagccagc actacaagcc        780
cgagtggccg gccttgtccg ggctcgtggc ccaggcccag gcccaggccc aggttgcccc        840
ttcactccta gaacggctgc aggctacctt gagcctcccc tttgccccgt ctcctcagga        900
ggggggtgtt ctggaccacc ttgtgactgc cacaaccagc ctggccagtc ccttcgtcac        960
cactgcctgc cacactctgt gccctgacca tccaccttcg ctgggcaccc gaagcaagtc       1020
cgtgccagag ctgttagtgc cagccgaagc ccagtccttc aggacaccaa agtctggccc       1080
ttcctctctg gcgataccag gagctcagga tagagaagag gaaacaggag gaggaggcca       1140
gaatggcaca gaagtagggg aagatgggat aggacaggct gggaacaggt aatcaggccc       1200
ctcccagggc ttctttcccc tctggagtgc ctccggcctc cccatccacc tctgcctaag       1260
taaatctgct ctcaacctat atatatacaa ggtcattcat tctagcattg tttgcaagag       1320
tgaaagagtg gaaacacccg aagtgtccat cagtaaggga caggctagat tgattacgga       1380
tgtaattgct gtccatccat acagagcata ctctacagtg tattctaaaa taagactaag       1440
gaagctgttt atattctgat atgaaactac catcaagatg tataaagtaa aaataactaa       1500
ggagtggaac agtg                                                          1514
```

```
<210>  36
<211>  1544
<212>  DNA
<213>  Homo sapiens

<220>
<221>  misc_feature
<223>  artificial sequence, Translation start at 155, stop at 1222

<400>  36
gaaagtccag ccatctgtta cctgcgttgc ttcctgggr gggatagtcc acctggaggc         60
attcggagac ccagtgattg tgctccgygg agcctgggct gtgccccgcg ttgactgcct        120
catagatacc ctacgaaccc caaatgccag ctgcatgaga aaagggactc accttctggt        180
tccctgcctg gaagaggaag agctggcatt gcacaggaga cggctggaca tgtctgaggc        240
actgccctgc ccgggcaagg agaccccac cccaggctgc aggctggggg ccctgtattg        300
ggcctgtgtc cacaatgatc ccacccagct ccaagccata ctggatggtg gggtctcccc        360
agaggaggcc acccaggtgg acagcaatgg gaggacaggc ctcatggtcg catgctacca       420
cggcttccag agtgttgtgg ccctgctcag ccactgtcct ttccttgatg tgaaccagca       480
ggacaaagga ggggacacgg ccctcatgtt ggctgcccaa gcaggccacg tgcctctagt       540
gagtctcctg ctcaactact atgtgggcct ggacctggaa cgccgggacc agcgggggct       600
cacggcgtta atgaaggctg ccatgcggaa ccgctgtgag tgcgtggcca ccctcctcat       660
ggcaggtgct gacctgacag cagtggaccc tgttcggggc aagacggccc tggaatgggc       720
agtgctgacc gacagcttcg acaccgtgtg gaggattcgg cagctgctga ggcggcccca       780
agtggagcag cttagccagc actacaagcc cgagtggccg gccttgtccg ggctcgtggc       840
ccaggcccag gcccaggccc aggttgcccc ttcactccta gaacggctgc aggctacctt       900
gagcctcccc tttgccccgt ctcctcagga ggggggtgtt ctggaccacc ttgtgactgc       960
cacaaccagc ctggccagtc ccttcgtcac cactgcctgc cacactctgt gccctgacca      1020
tccaccttcg ctgggcaccc gaagcaagtc cgtgccagag ctgttagtgc cagccgaagc      1080
ccagtccttc aggacaccaa agtctggccc ttcctctctg gcgataccag gagctcagga      1140
tagagaagag gaaacaggag gaggaggcca gaatggcaca gaagtagggg aagatgggat      1200
aggacaggct gggaacaggt aatcaggccc ctcccagggc ttctttcccc tctggagtgc      1260
ctccggcctc cccatccacc tctgcctaag taaatctgct ctcaacctat atatatacaa      1320
ggtcattcat tctagcattg tttgcaagag tgaaagagtg gaaacacccg aagtgtccat      1380
cagtaaggga caggctagat tgattacgga tgtaattgct gtccatccat acagagcata      1440
ctctacagtg tattctaaaa taagactaag gaagctgttt atattctgat atgaaactac      1500
catcaagatg tataaagtaa aaataactaa ggagtggaac agtg                       1544
```

<210> 37
<211> 345
<212> PRT
<213> Homo sapiens

<400> 37

```
Met Arg Lys Gly Thr His Leu Leu Val Pro Cys Leu Glu Glu Glu Glu
1               5                   10                  15
Leu Ala Leu His Arg Arg Arg Leu Asp Met Ser Glu Ala Leu Pro Cys
            20                  25                  30
Pro Gly Lys Glu Thr Pro Thr Pro Gly Cys Arg Leu Gly Ala Leu Tyr
        35                  40                  45
Trp Ala Cys Val His Asn Asp Pro Thr Gln Leu Gln Ala Ile Leu Asp
    50                  55                  60
Gly Gly Val Ser Pro Glu Glu Ala Thr Gln Val Asp Ser Asn Gly Arg
65                  70                  75                  80
Thr Gly Leu Met Val Ala Cys Tyr His Gly Phe Gln Ser Val Val Ala
                85                  90                  95
Leu Leu Ser His Cys Pro Phe Leu Asp Val Asn Gln Gln Asp Lys Gly
            100                 105                 110
Gly Asp Thr Ala Leu Met Leu Ala Ala Gln Ala Gly His Val Pro Leu
        115                 120                 125
Val Ser Leu Leu Leu Asn Tyr Tyr Val Gly Leu Asp Leu Glu Arg Arg
    130                 135                 140
Asp Gln Arg Gly Leu Thr Ala Leu Met Lys Ala Ala Met Arg Asn Arg
145                 150                 155                 160
Cys Ala Asp Leu Thr Ala Val Asp Pro Val Arg Gly Lys Thr Ala Leu
                165                 170                 175
Glu Trp Ala Val Leu Thr Asp Ser Phe Asp Thr Val Trp Arg Ile Arg
            180                 185                 190
Gln Leu Leu Arg Arg Pro Gln Val Glu Gln Leu Ser Gln His Tyr Lys
        195                 200                 205
Pro Glu Trp Pro Ala Leu Ser Gly Leu Val Ala Gln Ala Gln Ala Gln
    210                 215                 220
Ala Gln Val Ala Pro Ser Leu Leu Glu Arg Leu Gln Ala Thr Leu Ser
225                 230                 235                 240
Leu Pro Phe Ala Pro Ser Pro Gln Glu Gly Gly Val Leu Asp His Leu
                245                 250                 255
Val Thr Ala Thr Thr Ser Leu Ala Ser Pro Phe Val Thr Thr Ala Cys
            260                 265                 270
His Thr Leu Cys Pro Asp His Pro Pro Ser Leu Gly Thr Arg Ser Lys
        275                 280                 285
Ser Val Pro Glu Leu Leu Val Pro Ala Glu Ala Gln Ser Phe Arg Thr
    290                 295                 300
Pro Lys Ser Gly Pro Ser Ser Leu Ala Ile Pro Gly Ala Gln Asp Arg
305                 310                 315                 320
Glu Glu Glu Thr Gly Gly Gly Gln Asn Gly Thr Glu Val Gly Glu
                325                 330                 335
Asp Gly Ile Gly Gln Ala Gly Asn Arg
            340                 345
```

<210> 38
<211> 355
<212> PRT
<213> Homo sapiens

<400> 38

```
Met Arg Lys Gly Thr His Leu Leu Val Pro Cys Leu Glu Glu Glu Glu
1               5                   10                  15
Leu Ala Leu His Arg Arg Arg Leu Asp Met Ser Glu Ala Leu Pro Cys
            20                  25                  30
Pro Gly Lys Glu Thr Pro Thr Pro Gly Cys Arg Leu Gly Ala Leu Tyr
            35                  40                  45
Trp Ala Cys Val His Asn Asp Pro Thr Gln Leu Gln Ala Ile Leu Asp
        50              55                  60
Gly Gly Val Ser Pro Glu Glu Ala Thr Gln Val Asp Ser Asn Gly Arg
65                  70                  75                  80
Thr Gly Leu Met Val Ala Cys Tyr His Gly Phe Gln Ser Val Val Ala
                85                  90                  95
Leu Leu Ser His Cys Pro Phe Leu Asp Val Asn Gln Gln Asp Lys Gly
            100                 105                 110
Gly Asp Thr Ala Leu Met Leu Ala Ala Gln Ala Gly His Val Pro Leu
            115                 120                 125
Val Ser Leu Leu Leu Asn Tyr Tyr Val Gly Leu Asp Leu Glu Arg Arg
        130                 135                 140
Asp Gln Arg Gly Leu Thr Ala Leu Met Lys Ala Ala Met Arg Asn Arg
145                 150                 155                 160
Cys Glu Cys Val Ala Thr Leu Leu Met Ala Gly Ala Asp Leu Thr Ala
                165                 170                 175
Val Asp Pro Val Arg Gly Lys Thr Ala Leu Glu Trp Ala Val Leu Thr
                180                 185                 190
Asp Ser Phe Asp Thr Val Trp Arg Ile Arg Gln Leu Leu Arg Arg Pro
            195                 200                 205
Gln Val Glu Gln Leu Ser Gln His Tyr Lys Pro Glu Trp Pro Ala Leu
        210                 215                 220
Ser Gly Leu Val Ala Gln Ala Gln Ala Gln Ala Gln Val Ala Pro Ser
225                 230                 235                 240
Leu Leu Glu Arg Leu Gln Ala Thr Leu Ser Leu Pro Phe Ala Pro Ser
                245                 250                 255
Pro Gln Glu Gly Gly Val Leu Asp His Leu Val Thr Ala Thr Thr Ser
                260                 265                 270
Leu Ala Ser Pro Phe Val Thr Thr Ala Cys His Thr Leu Cys Pro Asp
                275                 280                 285
His Pro Pro Ser Leu Gly Thr Arg Ser Lys Ser Val Pro Glu Leu Leu
        290                 295                 300
Val Pro Ala Glu Ala Gln Ser Phe Arg Thr Pro Lys Ser Gly Pro Ser
305                 310                 315                 320
Ser Leu Ala Ile Pro Gly Ala Gln Asp Arg Glu Glu Glu Thr Gly Gly
                325                 330                 335
Gly Gly Gln Asn Gly Thr Glu Val Gly Glu Asp Gly Ile Gly Gln Ala
            340                 345                 350
Gly Asn Arg
        355
```

<210> 39
<211> 183
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

<223> genomic DNA, Exon from 1 to 143

<400> 39
gaaagtccag ccatctgtta cctgcgttgc ttcctggggr gggatagtcc acctggaggc   60
attcggagac ccagtgattg tgctccgygg agcctgggct gtgccccgcg ttgactgcct   120
catagatacc ctacgaaccc caagtaagaa aaaacgacga ccctctctcc gtgagtctca   180
ctg   183

<210> 40
<211> 462
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 108 to 358

<400> 40
gggataaatg ttttccctgg ggcaagggct gtgcacttcg cagctgctgg gtcccctccc   60
taggatccag ggagacactc actactcctc tccattctgt gttttagatg ccagctgcat   120
gagaaaaggg actccacttc tggttccctg cctggaagag gaagagctgg cattgcacag   180
gagacggctg gacatgtctg aggcactgcc ctgcccgggc aaggagaccc ccaccccagg   240
ctgcaggctg ggggccctgt attgggcctg tgtccacaat gatcccaccc agctccaagc   300
catactggat ggtggggtct ccccagagga ggccacccag gtggacagca atgggagggt   360
gagatgtcct ggcttcccag aacagctggg ggcatctttg catccccacc acaccgtcct   420
ggcctggctc cctgagaggg gttcaggggc aatacctcct gc   462

<210> 41
<211> 308
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 89 to 218

<400> 41
ctctgggaca gatatgggtt tagagggtgc aaggggccct ggagtggccc aggggggaaag   60
cagggatct gagctgcccc tccctcagac aggcctcatg gtcgcatgct accacggctt   120
ccagagtgtt gtggccctgc tcagccactg tcctttcctt gatgtgaacc agcaggacaa   180
aggaggggac acggccctca tgttggctgc ccaagcaggt gtgaggctgc tgcaccccac   240
ttccgacagc ccccttttga tgcagacagg gcctcagccc caccttgtt gcacggtgtt   300
ctacacca   308

<210> 42
<211> 231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 49 to 159

<400> 42
tcatcacccc ctttcctggg gaccaagctt acccttgctg ccctgcaggc cacgtgcctc   60
tagtgagtct cctgctcaac tactatgtgg gcctggacct ggaacgccgg gaccagcggg   120

```
ggctcacggc gttaatgaag gctgccatgc ggaaccgctg tgagtgcgtg gccaccctcc    180
tcatggcagg tgtgcggggc ctggaccggg gtgtgtggcc tccagtccct c             231
```

<210> 43
<211> 231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 49 to 189

<400> 43
```
tcatcacccc ctttcctggg gaccaagctt acccttgctg ccctgcaggc cacgtgcctc     60
tagtgagtct cctgctcaac tactatgtgg gcctggacct ggaacgccgg gaccagcggg    120
ggctcacggc gttaatgaag gctgccatgc ggaaccgctg tgagtgcgtg gccaccctcc    180
tcatggcagg tgtgcggggc ctggaccggg gtgtgtggcc tccagtccct c             231
```

<210> 44
<211> 588
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 98 to 499

<400> 44
```
aatgtaaccc acatcagtct tgctcctaaa gaatctgccc ttccacaaat caccaacccc     60
tatcccgccc catgtcaccc cctgtgctcc ttcccaggtg ctgacctgac agcagtggac    120
cctgttcggg gcaagacggc cctggaatgg gcagtgctga ccgacagctt cgacaccgtg    180
tggaggattc ggcagctgct gaggcggccc caagtggagc agcttagcca gcactacaag    240
cccgagtggc cggccttgtc cgggctcgtg gcccaggccc aggcccaggc ccaggttgcc    300
ccttcactcc tagaacggct gcaggctacc ttgagcctcc cctttgcccc gtctcctcag    360
gagggggtg ttctggacca ccttgtgact gccacaacca gcctggccag tcccttcgtc     420
accactgcct gccacactct gtgccctgac catccacctt cgctgggcac ccgaagcaag    480
tccgtgccag agctgttagg tactgccccg cccctcccc tggttcccca gtccccgcca     540
gggagtcccc agaggtcccc gtgggtcttc gtccctacc agagccct                  588
```

<210> 45
<211> 503
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> genomic DNA, Exon from 27 to 503

<400> 45
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ccaaggcatc ctcatcctcc caccagtgcc agccgaagcc cagtccttca ggacaccaaa     60
gtctggccct tcctctctgg cgataccagg agctcaggat agagaagagg aaacaggagg    120
aggaggccag aatggcacag aagtagggga agatgggata ggacaggctg ggaacaggta    180
atcaggcccc tcccagggct tctttcccct ctggagtgcc tccggcctcc ccatccacct    240
ctgcctaagt aaatctgctc tcaacctata tatatacaag gtcattcatt ctagcattgt    300
ttgcaagagt gaaagagtgg aaacacccga agtgtccatc agtaagggac aggctagatt    360
gattacggat gtaattgctg tccatccata cagagcatac tctacagtgt attctaaaat    420
```

```
aagactaagg aagctgttta tattctgata tgaaactacc atcaagatgt ataaagtaaa      480
aataactaag gagtggaaca gtg                                             503
```

```
<210>    46
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    46
ctcacatcct tctcagcc                                                    18
```

```
<210>    47
<211>    19
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    47
gtggaatgtc agggaaatc                                                   19
```

```
<210>    48
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    48
tgactgcctc caggaatt                                                    18
```

```
<210>    49
<211>    18
<212>    DNA
<213>    Artificial Sequence

<220>
<223>    primer

<400>    49
ttacgaaatg aatgggcg                                                    18
```

```
<210>    50
<211>    18
<212>    DNA
<213>    Artificial Sequence
```

```
<220>
<223>  primer

<400>  50
aggctctagg tccatgac                                              18


<210>  51
<211>  19
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  51
atgtgaaatc tgcgaaagg                                             19


<210>  52
<211>  18
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  52
cgtgccatga ctgagtac                                              18


<210>  53
<211>  18
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  53
aactgcagtg ggtaccag                                              18


<210>  54
<211>  19
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  54
tctgagccta gaggatacc                                             19


<210>  55
<211>  18
```

```
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   55
gatctcagag gcaggttg                                                    18


<210>   56
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   56
tgctgtgaag attggagatc                                                  20


<210>   57
<211>   36
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<220>
<221>   misc_feature
<222>   (24)..(35)
<223>   n = inosine

<400>   57
ggccacgcgt cgactagtac gggnngggnn gggnng                                36


<210>   58
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   58
ggccacgcgt cgactagtac                                                  20


<210>   59
<211>   20
<212>   DNA
<213>   Artificial Sequence

<220>
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<223> primer

<400> 59
agcttgaagt ggctaaagtc   20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 60
tgatctccaa tcttcacagc   20

<210> 61
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 61
tgtgccagga aaggaagg   18

<210> 62
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 62
tagtcagcag catcggggg   19

<210> 63
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 63
agcaagttca gcctggttaa g   21

<210> 64
<211> 18
<212> DNA

```
<213>   Artificial Sequence

<220>
<223>   primer

<400>   64
atgttcagtc aggcaggg                                                18


<210>   65
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   65
ttcttgtcgg atgccctc                                                18


<210>   66
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   66
cggaaccgct gtgagtgc                                                18


<210>   67
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   67
taggcagagg tggatggg                                                18


<210>   68
<211>   18
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   primer

<400>   68
ggccactcgg gcttgtag                                                18
```

```
<210>  69
<211>  18
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  69
gtgcaatgcc agctcttc                                                    18


<210>  70
<211>  18
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  70
tgccaagctg ttagtgcc                                                    18


<210>  71
<211>  18
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  primer

<400>  71
catgctacca cggcttcc                                                    18
```